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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|-------------------------|---------------------|------------------|
| 10/649,359 | 08/27/2003 | James William Kortovich | P2022-2/N9719 | 4603 |
| 23456 | 7590 | 06/28/2004 | | EXAMINER |
| WADDEY & PATTERSON 414 UNION STREET, SUITE 2020 BANK OF AMERICA PLAZA NASHVILLE, TN 37219 | | | | ORTIZ, ANGELA Y |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1732 | |

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/649,359 | KORTOVICH ET AL. | |
| | Examiner Angela Ortiz | Art Unit 1732 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 August 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-29 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date (2). | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shao et al., USP 6,280,663 (already of record) in view of Singer et al., USP 4,891,203.

The cited primary reference substantially teaches the basic claimed process including forming a graphite article (electrode pin) comprising combining calcined coke having been crushed, sized and milled, mixed with a pitch binder and carbon fibers to form a blend. The reference further teaches that the particle size of the coke is selected according to the end use and is within the skill of the art. See col. 3, lines 12-28. After the blend is prepared, it is fed to an extrusion-molding die and forms a greenstock. See col. 4, lines 20-30. After extrusion, the greenstock is heated to form a carbonized stock, and is then graphitized by heat-treating at a temperature between 2500-3400°C. See col. 4, lines 38-41, 50-54.

The cited primary reference does not teach the claimed weight percentages, or the particle sizes having the claimed diameters that pass through the claimed mesh screen sizes.

The added secondary reference teaches as conventional the feature of forming an improved graphite article which can be formed into various shapes using an advanced form of coke, known as semicoke, wherein the semicoke is formed into flakes for greater flexibility in molding into various shapes. The forming of semicoke avoids undue foaming of the coke, and maintains the orientation of the structure, thus improving the strength of the structure formed. The method comprises forming flake-sized coke wherein the coke is combined with a binder in an amount of 70-80 wt% coke, and mixed into a homogenous blend; the mixture is then extruded into a desired shape.

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The shaped article is carbonized and then graphitized using techniques well known in the art. Note that example 1 sets forth a preferred particle size of 5-10 mm in diameter and 1 mm in thickness; example 2 sets forth sieving the materials through a stack of sieves of 35, 65 and 100 Tyler mesh sizes; example 3 sets forth materials sized such that 55% passed through a 200 Tyler mesh sieve. See col. 10, lines 50-55, 64-68; col. 11, lines 1-25, examples 1, 2, and 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use flake-sized coke particles as set forth in the added reference, when performing the process set forth in the primary reference, for making a graphite article having improved strength, wherein the molding process avoids undesirable foaming of the coke and loss of orientation of the structure during the plastic deformation stage.

Note that the added reference teaches experimentation with the determination of the optimum range of the particle sizes and diameter. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the particle size of the coke according to the end use as such is well within the skill of the art.

With respect to claims 2-8, 20-28, note that carbon fibers are taught as conventional in the primary reference at col. 3, lines 28-40 and col. 4, lines 12-20. Note that the length is no more than 32 mm; the fibers are present at the claimed level; have a Young's modulus as claimed; the tensile strength is $200-400 \times 10^3$, which is at least about 150,000 psi as claimed. Note that the point of addition into the blend can be selected according to the practitioner's choice, as such is well within the skill of the art.

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With respect to claims 9-11, 14, 19, 29, note that the particulate material and coke are described as conventional in the applied prior art; see the primary reference at col. 3, lines 16-25; also see USP 4,891,203 at col. 11, lines 1-25 and example 3, col. 13, lines 20-40.

With respect to claims 12-13, 17-18, note that the use of iron oxide as an additive filler material is described in the applied prior art at USP 6,280,663 at col. 6, lines 25-30 and example 2; note that the diameter sizes can be selected according to the end use as such is well within the skill of the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP's 2997744; 3865713; 4061600; 4308073; 4311682; 4670201; 4959139; 5413738.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela Ortiz whose telephone number is 571-272-1206. The examiner can normally be reached on Monday-Thursday 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Angela Ortiz
Primary Examiner
Art Unit 1732

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